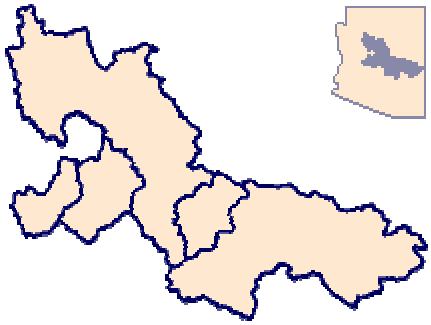
CENTRAL HIGHLANDS PLANNING AREA



The Central highlands planning area is located in the east-central and central portion of the state and consists of five groundwater basins known as the Salt River Basin, Tonto Creek Basin, Verde River Basin, Agua Fria Basin, and Upper Hassayampa basins.

Most of the planning area lies within the Central highlands physiographic province, an area of transition separating the Colorado Plateau to the north and the Basin and Range province to the south and west. The Central highlands area is characterized by a relatively narrow band of rugged mountains composed of igneous, metamorphic, and sedimentary rocks. Due to the high elevations, steep gradients, and predominance of hardrock, the Central highlands has minimal water storage capabilities and high runoff as compared to most of the alluvial basins in the State. The Salt River basin, in the eastern portion of the Central highlands, depends primarily on short-term recharge and is therefore, a very sensitive area in terms of both drought and groundwater pumpage. Groundwater issuing from seeps and springs in the higher elevations feeds the perennial streams that serve as a major water supply for the Phoenix metropolitan area.

The southwestern portion of the planning area falls within the Basin and Range province. This province is characterized by northwest-southeast trending mountain ranges separated by broad alluvial valleys.

Climate in the planning area varies widely and is primarily a function of elevation. Dry, semi-arid areas in the lower elevations receive the majority of their precipitation during the winter months. Late summer thunderstorms provide intense, short duration rainfall that produce large amounts of runoff, but less infiltration than the low-intensity winter storms. Precipitation in the higher elevations is heaviest in July and August, however the winter months all have moderate to high precipitation. Average annual precipitation ranges from 10 inches in the lower elevations of the Agua Fria and Upper Hassayampa basins to 35-40 inches in the higher elevations of the Salt River basin. Similarly, average annual temperatures range from 70°F at Bartlett Dam (1,650 feet above mean sea level) in the Verde River basin to 47°F at McNary (7,300 feet above mean sea level) in the Salt River basin (Brazel, 1981).

The planning area is bordered on the north and northwest by the Little Colorado River and Coconino Plateaus. The western boundary traverses the western edge of the Verde River and Upper Hassayampa basins, while the southern boundary of the planning area follows the boundaries of the Upper Hassayampa, Agua Fria, Verde River, and Salt River basins. Elevations range from 1,500 feet above mean sea level at Saguaro Lake on the Salt River to 12,600 feet above mean sea level at Humphrey's Peak in the San Francisco Mountains. Major populated areas within the area include Sedona, Clarkdale, Cottonwood, Camp Verde, Payson, and Globe-Miami. The demand for water is concentrated in Globe-Miami, Payson, the Verde Valley, and in Wickenburg. The planning area includes parts of Apache, Greenlee, Graham, Navajo, Gila, Maricopa, Yavapai, and Coconino Counties.

HYDROLOGY OF INDIVIDUAL BASINS AND WATERSHEDS

GROUNDWATER

Salt River Basin
Tonto Creek Basin
Verde River Basin
Agua Fria Basin
Upper Hassayampa Basin

SURFACE WATER

Salt River Watershed
Verde River Watershed
Agua Fria River Watershed
Hassayampa River Watershed

REFERENCES used for Central Highlands Planning Area description